

## *Tables*

**Table 1**  
**Conceptual Design Cost Estimate for Alternative 2A - Deepen Bank to Bank (Dredge to Historic Navigation Depth)**  
**CDF Disposal of Sediment**  
**Kinnickinnic River**  
**Milwaukee, Wisconsin**

Item	Unit	Estimated Unit Cost	Estimated Quantity	Present Worth
<b>Capital Costs</b>				
Mobilization/Demobilization	LS	\$100,000	1	\$100,000
Sunken Boat Removal	LS	\$100,000	1	\$100,000
Seawall Repair/Installation <sup>1</sup>	LF	\$1,200	3,983	\$4,779,600
Silt Containment Barrier	LS	\$200,000	1	\$200,000
Dredging/Barge Transport to CDF <sup>2</sup>	CYD	\$20	192,000	\$3,840,000
CDF Disposal Costs <sup>2</sup>	CYD	\$12	192,000	\$2,304,000
Decontamination	LS	\$15,000	1	\$15,000
<b>Sub-total: Full Scale Capital Costs</b>				<b>\$11,338,600</b>
<b>Engineering &amp; Administration</b>				
Engineering Design	LS	\$150,000	1	\$150,000
Construction Management/Oversight/Monitoring	LS	\$650,000	1	\$650,000
Permitting	LS	\$75,000	1	\$75,000
Reporting	LS	\$75,000	1	\$75,000
<b>Sub-total: Engineering &amp; Administration</b>				<b>\$950,000</b>
<b>TOTAL: Capital, Engineering &amp; Administration</b>				<b>\$12,288,600</b>
<b>Operation &amp; Maintenance</b>				
None Anticipated				\$0
<b>TOTAL: Annual Costs (Net Present Value, I = 7%)</b>				<b>\$0</b>
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<b>SUBTOTAL:</b>				<b>\$12,288,600</b>
<b>CONTINGENCY (25%)<sup>3</sup></b>				<b>\$3,072,150</b>
<b>TOTAL COST<sup>4</sup></b>				<b>\$15,000,000</b>

**NOTES:**

- 1 Seawall replacement costs do not include contractor mob/demobilization, engineering design, construction observation, and project contingencies.
- 2 For this cost estimate it is assumed that disposal will occur at the Jones Island CDF. However, no permission has been requested or granted.
- 3 Contingency represents the cost of items not estimated in detail, but known to be part of the project and the uncertainty in the amount or type of work that will ultimately be required.
- 4 Total cost was rounded to nearest million dollars.

Source: USACE/ WDNR. April 7, 2004. Kinnickinnic River, Wisconsin - Milwaukee Estuary of Concern - Deepening/Remediation Concept Design Documentation Report.

Y:\49\41\016\final\Tables. Figures\Tables 1 to 10 - CDDR cost estimates

**Table 2**  
**Conceptual Design Cost Estimate for Alternative 2A - Deepen Bank to Bank (Dredge to Historic Navigation Depth)**  
**Landfill Disposal of Sediment**  
**Kinnickinnic River**  
**Milwaukee, Wisconsin**

Item	Unit	Estimated Unit Cost	Estimated Quantity	Present Worth
<b>Capital Costs</b>				
Dewatering and Treatability Study	LS	\$50,000	1	\$50,000
Mobilization/Demobilization	LS	\$100,000	1	\$100,000
Sunken Boat Removal	LS	\$100,000	1	\$100,000
Seawall Repair/Installation <sup>1</sup>	LF	\$1,200	3,983	\$4,779,600
Silt Containment Barrier	LS	\$200,000	1	\$200,000
Dredging/Barge Transport to Staging Area <sup>2</sup>	CYD	\$20	192,000	\$3,840,000
Dewatering Area Construction (Berthing, Drains, etc) <sup>2</sup>	LS	\$150,000	1	\$150,000
Dewatering/Staging <sup>2,3</sup>	CYD	\$15	211,200	\$3,168,000
Treatment/Discharge of Pore Water <sup>2,4</sup>	MGAL	\$20,000	21.1	\$422,400
Stabilization/Solidification/Testing <sup>5</sup>	CYD	\$15	190,080	\$2,851,200
Handling of Stabilized Sediment for Disposal	CYD	\$5	190,080	\$950,400
Transportation <sup>6</sup>	TON	\$10	256,608	\$2,566,080
Disposal at Landfill <sup>7</sup>	TON	\$30	256,608	\$7,698,240
Decontamination	LS	\$50,000	1	\$50,000
Site Restoration of Staging Area	LS	\$50,000	1	\$50,000
<b>Sub-total: Full Scale Capital Costs</b>				<b>\$26,975,920</b>
<b>Engineering &amp; Administration</b>				
Engineering Design	LS	\$200,000	1	\$200,000
Construction Management/Oversight/Monitoring	LS	\$1,600,000	1	\$1,600,000
Permitting	LS	\$150,000	1	\$150,000
Reporting	LS	\$100,000	1	\$100,000
<b>Sub-total: Engineering &amp; Administration</b>				<b>\$2,050,000</b>
<b>TOTAL: Capital, Engineering &amp; Administration</b>				<b>\$29,025,920</b>
<b>Operation &amp; Maintenance</b>				
None Anticipated				\$0
<b>TOTAL: Annual Costs (Net Present Value, i = 7%)</b>				<b>\$0</b>
<b>SUBTOTAL:</b>				<b>\$29,025,920</b>
<b>CONTINGENCY (25%)<sup>8</sup></b>				<b>\$7,256,480</b>
<b>TOTAL COST<sup>9</sup></b>				<b>\$36,000,000</b>

**NOTES:**

- 1 Seawall replacement costs do not include contractor mob/demobilization, engineering design, construction observation, and project contingencies.
- 2 It is assumed that staging will occur at the Jones Island CDF. However, no permission has been requested or granted.
- 3 Dewatering volume of sediments assumes a 10% volume increase from dredging.
- 4 Water treatment volume assumes 100 gallons of water removed per cyd of sediment dredged.
- 5 Assumes a 10% decrease in sediment volume from dewatering.
- 6 Assumes sediment density of approximately 1.35 tons/cyd.
- 7 Costs for disposal at the Metro Landfill - Franklin, Wisconsin
- 8 Contingency represents the cost of items not estimated in detail, but known to be part of the project and the uncertainty in the amount or type of work that will ultimately be required.
- 9 Total cost was rounded to nearest million dollars.

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**Table 3**  
**Conceptual Design Cost Estimate for Alternative 2B - Deepen Bank to Bank (Dredge to Minimum Navigation Depth)/ Isolate Contaminated Sediments**  
**CDF Disposal of Sediment**  
**Kinnickinnic River**  
**Milwaukee, Wisconsin**

Item	Unit	Estimated Unit Cost	Estimated Quantity	Annual Cost	Present Worth
<b>Capital Costs</b>					
Cap Pilot Study	LS	\$50,000	1		\$50,000
Mobilization/Demobilization	LS	\$100,000	1		\$100,000
Sunken Boat Removal	LS	\$100,000	1		\$100,000
Seawall Repair/Installation <sup>1</sup>	LF	\$1,200	3,983		\$4,779,600
Silt Containment Barrier	LS	\$200,000	1		\$200,000
Dredging/Barge Transport to CDF <sup>2</sup>	CYD	\$20	92,000		\$1,840,000
CDF Disposal Costs <sup>2</sup>	CYD	\$12	92,000		\$1,104,000
Cap Construction (3 ft cap)	CYD	\$30	35,000		\$1,050,000
Decontamination	LS	\$15,000	1		\$15,000
<b>Sub-total: Full Scale Capital Costs</b>					<b>\$9,238,600</b>
<b>Engineering &amp; Administration</b>					
Engineering Design	LS	\$150,000	1		\$150,000
Construction Management/Oversight/Monitoring	LS	\$500,000	1		\$500,000
Permitting	LS	\$75,000	1		\$75,000
Reporting	LS	\$75,000	1		\$75,000
<b>Sub-total: Engineering &amp; Administration</b>					<b>\$800,000</b>
<b>TOTAL: Capital, Engineering &amp; Administration</b>					<b>\$10,038,600</b>
<b>Operation &amp; Maintenance</b>					
Annual Monitoring and Reporting	LS	\$20,000	1	20,000	\$248,181
Annual Cap Repair	LS	\$20,000	1	20,000	\$248,181
<b>TOTAL: Annual Costs (Net Present Value, I = 7%, 30 yr)</b>					<b>\$496,362</b>
<b>SUBTOTAL:</b>					<b>\$10,534,962</b>
<b>CONTINGENCY (25%) <sup>3</sup></b>					<b>\$2,633,740</b>
<b>TOTAL COST <sup>4</sup></b>					<b>\$13,000,000</b>

**NOTES:**

- 1 Seawall replacement costs do not include contractor mob/demobilization, engineering design, construction observation, and project contingencies.
- 2 For this cost estimate it is assumed that disposal will occur at the Jones Island CDF. However, no permission has been requested or granted.
- 3 Contingency represents the cost of items not estimated in detail, but known to be part of the project and the uncertainty in the amount or type of work that will ultimately be required.
- 4 Total cost was rounded to nearest million dollars.

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**Table 4**  
**Conceptual Design Cost Estimate for Alternative 2B - Deepen Bank to Bank (Dredge to Minimum Navigation Depth)/ Isolate Contaminated Sediments**  
**Landfill Disposal of Sediment**  
**Kinnickinnic River**  
**Milwaukee, Wisconsin**

Item	Unit	Estimated Unit Cost	Estimated Quantity	Annual Cost	Present Worth
<b>Capital Costs</b>					
Cap Pilot Study	LS	\$50,000	1		\$50,000
Dewatering and Treatability Study	LS	\$50,000	1		\$50,000
Mobilization/Demobilization	LS	\$100,000	1		\$100,000
Sunken Boat Removal	LS	\$100,000	1		\$100,000
Seawall Repair/Installation <sup>1</sup>	LF	\$1,200	3,983		\$4,779,600
Silt Containment Barrier	LS	\$200,000	1		\$200,000
Dredging/Barge Transport to Staging Area <sup>2</sup>	CYD	\$20	92,000		\$1,840,000
Dewatering Area Construction (Berthing, Drains, etc) <sup>2</sup>	LS	\$150,000	1		\$150,000
Dewatering/Staging <sup>2,3</sup>	CYD	\$15	101,200		\$1,518,000
Treatment/Discharge of Pore Water <sup>2,4</sup>	MGAL	\$20,000	10.1		\$202,400
Stabilization/Solidification/Testing <sup>5</sup>	CYD	\$15	91,080		\$1,366,200
Handling of Stabilized Sediment for Disposal	CYD	\$5	91,080		\$455,400
Transportation <sup>6</sup>	TON	\$10	122,958		\$1,229,580
Disposal at Landfill <sup>7</sup>	TON	\$30	122,958		\$3,688,740
Cap Construction (3 ft cap)	CYD	\$30	35,000		\$1,050,000
Decontamination	LS	\$50,000	1		\$50,000
Site Restoration of Staging Area	LS	\$50,000	1		\$50,000
<b>Sub-total: Full Scale Capital Costs</b>					<b>\$16,879,920</b>
<b>Engineering &amp; Administration</b>					
Engineering Design	LS	\$200,000	1		\$200,000
Construction Management/Oversight/Monitoring	LS	\$900,000	1		\$900,000
Permitting	LS	\$150,000	1		\$150,000
Reporting	LS	\$100,000	1		\$100,000
<b>Sub-total: Engineering &amp; Administration</b>					<b>\$1,350,000</b>
<b>TOTAL: Capital, Engineering &amp; Administration</b>					<b>\$18,229,920</b>
<b>Operation &amp; Maintenance</b>					
Annual Monitoring and Reporting	LS	\$20,000	1	20,000	\$248,181
Annual Cap Repair	LS	\$20,000	1	20,000	\$248,181
<b>TOTAL: Annual Costs (Net Present Value, I = 7%, 30 yr)</b>					<b>\$496,362</b>
<b>SUBTOTAL:</b>					<b>\$18,726,282</b>
<b>CONTINGENCY (25%) <sup>8</sup></b>					<b>\$4,681,570</b>
<b>TOTAL COST <sup>9</sup></b>					<b>\$23,000,000</b>

**NOTES:**

- 1 Seawall replacement costs do not include contractor mob/demobilization, engineering design, construction observation, and project contingencies.
- 2 It is assumed that staging will occur at the Jones Island CDF. However, no permission has been requested or granted.
- 3 Dewatering volume of sediments assumes a 10% volume increase from dredging.
- 4 Water treatment volume assumes 100 gallons of water removed per cyd of sediment dredged.
- 5 Assumes a 10% decrease in sediment volume from dewatering.
- 6 Assumes sediment density of approximately 1.35 tons/cyd.
- 7 Costs for disposal at the Metro Landfill - Franklin, Wisconsin
- 8 Contingency represents the cost of items not estimated in detail, but known to be part of the project and the uncertainty in the amount or type of work that will ultimately be required.
- 9 Total cost was rounded to nearest million dollars.

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Y:\49\41\016\final\Tables. Figures\Tables 1 to 10 - CDDR cost estimates

Table 5  
**Conceptual Design Cost Estimate for Alternative 2C - Deepen Bank to Bank (Dredge to Minimum Navigation Depth Based on  
Historic Low Water Level)/Isolate Contaminated Sediments  
CDF Disposal of Sediment  
Kinnickinnic River  
Milwaukee, Wisconsin**

Item	Unit	Estimated Unit Cost	Estimated Quantity	Annual Cost	Present Worth
<b>Capital Costs</b>					
Cap Pilot Study	LS	\$50,000	1		\$50,000
Mobilization/Demobilization	LS	\$100,000	1		\$100,000
Sunken Boat Removal	LS	\$100,000	1		\$100,000
Seawall Repair/Installation <sup>1</sup>	LF	\$1,200	3,983		\$4,779,600
Silt Containment Barrier	LS	\$200,000	1		\$200,000
Dredging/Barge Transport to CDF <sup>2</sup>	CYD	\$20	110,000		\$2,200,000
CDF Disposal Costs <sup>2</sup>	CYD	\$12	110,000		\$1,320,000
Cap Construction (3 ft cap)	CYD	\$30	35,000		\$1,050,000
Decontamination	LS	\$15,000	1		\$15,000
<b>Sub-total: Full Scale Capital Costs</b>					<b>\$9,814,600</b>
<b>Engineering &amp; Administration</b>					
Engineering Design	LS	\$150,000	1		\$150,000
Construction Management/Oversight/Monitoring	LS	\$500,000	1		\$500,000
Permitting	LS	\$75,000	1		\$75,000
Reporting	LS	\$75,000	1		\$75,000
<b>Sub-total: Engineering &amp; Administration</b>					<b>\$800,000</b>
<b>TOTAL: Capital, Engineering &amp; Administration</b>					<b>\$10,614,600</b>
<b>Operation &amp; Maintenance</b>					
Annual Monitoring and Reporting	LS	\$20,000	1	20,000	\$248,181
Annual Cap Repair	LS	\$20,000	1	20,000	\$248,181
<b>TOTAL: Annual Costs (Net Present Value, I = 7%, 30 yr)</b>					<b>\$496,362</b>
<b>SUBTOTAL:</b>					<b>\$11,110,962</b>
<b>CONTINGENCY (25%) <sup>3</sup></b>					<b>\$2,777,740</b>
<b>TOTAL COST <sup>4</sup></b>					<b>\$14,000,000</b>

**NOTES:**

- 1 Seawall replacement costs do not include contractor mob/demobilization, engineering design, construction observation, and project contingencies.
- 2 For this cost estimate it is assumed that disposal will occur at the Jones Island CDF. However, no permission has been requested or granted.
- 3 Contingency represents the cost of items not estimated in detail, but known to be part of the project and the uncertainty in the amount or type of work that will ultimately be required.
- 4 Total cost was rounded to nearest million dollars.

Source: USACE/ WDNR. April 7, 2004. Kinnickinnic River, Wisconsin - Milwaukee Estuary of Concern - Deepening/Remediation Concept Design Documentation Report.

Y:\49\41\016\final\Tables. Figures\Tables 1 to 10 - CDDR cost estimates

Table 6  
**Conceptual Design Cost Estimate for Alternative 2C - Deepen Bank to Bank (Dredge to Minimum Navigation Depth Based on  
Historic Low Water Level)/Isolate Contaminated Sediments  
Landfill Disposal of Sediment  
Kinnickinnic River  
Milwaukee, Wisconsin**

Item	Unit	Estimated Unit Cost	Estimated Quantity	Annual Cost	Present Worth
<b>Capital Costs</b>					
Cap Pilot Study	LS	\$50,000	1		\$50,000
Dewatering and Treatability Study	LS	\$50,000	1		\$50,000
Mobilization/Demobilization	LS	\$100,000	1		\$100,000
Sunken Boat Removal	LS	\$100,000	1		\$100,000
Seawall Repair/Installation <sup>1</sup>	LF	\$1,200	3,983		\$4,779,600
Silt Containment Barrier	LS	\$200,000	1		\$200,000
Dredging/Barge Transport to Staging Area <sup>2</sup>	CYD	\$20	110,000		\$2,200,000
Dewatering Area Construction (Berming, Drains, etc) <sup>2</sup>	LS	\$150,000	1		\$150,000
Dewatering/Staging <sup>2,3</sup>	CYD	\$15	121,000		\$1,815,000
Treatment/Discharge of Pore Water <sup>2,4</sup>	MGAL	\$20,000	12.1		\$242,000
Stabilization/Solidification/Testing <sup>5</sup>	CYD	\$15	108,900		\$1,633,500
Handling of Stabilized Sediment for Disposal	CYD	\$5	108,900		\$544,500
Transportation <sup>6</sup>	TON	\$10	147,015		\$1,470,150
Disposal at Landfill <sup>7</sup>	TON	\$30	147,015		\$4,410,450
Cap Construction (3 ft cap)	CYD	\$30	35,000		\$1,050,000
Decontamination	LS	\$50,000	1		\$50,000
Site Restoration of Staging Area	LS	\$50,000	1		\$50,000
<b>Sub-total: Full Scale Capital Costs</b>					<b>\$18,895,200</b>
<b>Engineering &amp; Administration</b>					
Engineering Design	LS	\$200,000	1		\$200,000
Construction Management/Oversight/Monitoring	LS	\$900,000	1		\$900,000
Permitting	LS	\$150,000	1		\$150,000
Reporting	LS	\$100,000	1		\$100,000
<b>Sub-total: Engineering &amp; Administration</b>					<b>\$1,350,000</b>
<b>TOTAL: Capital, Engineering &amp; Administration</b>					<b>\$20,245,200</b>
<b>Operation &amp; Maintenance</b>					
Annual Monitoring and Reporting	LS	\$20,000	1	20,000	\$248,181
Annual Cap Repair	LS	\$20,000	1	20,000	\$248,181
<b>TOTAL: Annual Costs (Net Present Value, I = 7%, 30 yr)</b>					<b>\$496,362</b>
<b>SUBTOTAL:</b>					<b>\$20,741,562</b>
<b>CONTINGENCY (25%)<sup>8</sup></b>					<b>\$5,185,390</b>
<b>TOTAL COST <sup>9</sup></b>					<b>\$26,000,000</b>

**NOTES:**

- <sup>1</sup> Seawall replacement costs do not include contractor mob/demobilization, engineering design, construction observation, and project contingencies.
- <sup>2</sup> It is assumed that staging will occur at the Jones Island CDF. However, no permission has been requested or granted.
- <sup>3</sup> Dewatering volume of sediments assumes a 10% volume increase from dredging.
- <sup>4</sup> Water treatment volume assumes 100 gallons of water removed per cyd of sediment dredged.
- <sup>5</sup> Assumes a 10% decrease in sediment volume from dewatering.
- <sup>6</sup> Assumes sediment density of approximately 1.35 tons/cyd.
- <sup>7</sup> Costs for disposal at the Metro Landfill - Franklin, Wisconsin
- <sup>8</sup> Contingency represents the cost of items not estimated in detail, but known to be part of the project and the uncertainty in the amount or type of work that will ultimately be required.
- <sup>9</sup> Total cost was rounded to nearest million dollars.

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Y:\49\41\016\final\Tables. Figures\Tables 1 to 10 - CDDR cost estimates

**Table 7**  
**Conceptual Design Cost Estimate for Alternative 3A - 80-Foot Wide Navigation Channel (Dredged to Historic Navigation Depth)**  
**CDF Disposal of Sediment**  
**Kinnickinnic River**  
**Milwaukee, Wisconsin**

Item	Unit	Estimated Unit Cost	Estimated Quantity	Present Worth
<b>Capital Costs</b>				
Mobilization/Demobilization	LS	\$100,000	1	\$100,000
Sunken Boat Removal	LS	\$100,000	1	\$100,000
Seawall Repair/Installation <sup>1</sup>	LF	\$1,200	2,669	\$3,202,800
Silt Containment Barrier	LS	\$200,000	1	\$200,000
Dredging/Barge Transport to CDF <sup>2</sup>	CYD	\$20	170,000	\$3,400,000
CDF Disposal Costs <sup>2</sup>	CYD	\$12	170,000	\$2,040,000
Decontamination	LS	\$15,000	1	\$15,000
<b>Sub-total: Full Scale Capital Costs</b>				<b>\$9,057,800</b>
<b>Engineering &amp; Administration</b>				
Engineering Design	LS	\$150,000	1	\$150,000
Construction Management/Oversight/Monitoring	LS	\$500,000	1	\$500,000
Permitting	LS	\$75,000	1	\$75,000
Reporting	LS	\$75,000	1	\$75,000
<b>Sub-total: Engineering &amp; Administration</b>				<b>\$800,000</b>
<b>TOTAL: Capital, Engineering &amp; Administration</b>				<b>\$9,857,800</b>
<b>Operation &amp; Maintenance</b>				
None Anticipated				\$0
<b>TOTAL: Annual Costs (Net Present Value, I = 7%)</b>				<b>\$0</b>
<hr/>				
<b>SUBTOTAL:</b>				<b>\$9,857,800</b>
<b>CONTINGENCY (25%) <sup>3</sup></b>				<b>\$2,464,450</b>
<b>TOTAL COST <sup>4</sup></b>				<b>\$12,000,000</b>

**NOTES:**

- 1 Seawall replacement costs do not include contractor mob/demobilization, engineering design, construction observation, and project contingencies.
- 2 For this cost estimate it is assumed that disposal will occur at the Jones Island CDF. However, no permission has been requested or granted.
- 3 Contingency represents the cost of items not estimated in detail, but known to be part of the project and the uncertainty in the amount or type of work that will ultimately be required.
- 4 Total cost was rounded to nearest million dollars.

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Y:\49\41\016\final\Tables. Figures\Tables 1 to 10 - CDDR cost estimates



**Table 8**  
**Conceptual Design Cost Estimate for Alternative 3A - 80-Foot Wide Navigation Channel (Dredged to Historic Navigation Depth)**  
**Landfill Disposal of Sediment**  
**Kinnickinnic River**  
**Milwaukee, Wisconsin**

Item	Unit	Estimated Unit Cost	Estimated Quantity	Present Worth
<b>Capital Costs</b>				
Dewatering and Treatability Study	LS	\$50,000	1	\$50,000
Mobilization/Demobilization	LS	\$100,000	1	\$100,000
Sunken Boat Removal	LS	\$100,000	1	\$100,000
Seawall Repair/Installation <sup>1</sup>	LF	\$1,200	2,669	\$3,202,800
Silt Containment Barrier	LS	\$200,000	1	\$200,000
Dredging/Barge Transport to Staging Area <sup>2</sup>	CYD	\$20	170,000	\$3,400,000
Dewatering Area Construction (Berthing, Drains, etc) <sup>2</sup>	LS	\$150,000	1	\$150,000
Dewatering/Staging <sup>2,3</sup>	CYD	\$15	187,000	\$2,805,000
Treatment/Discharge of Pore Water <sup>2,4</sup>	MGAL	\$20,000	18.7	\$374,000
Stabilization/Solidification/Testing <sup>5</sup>	CYD	\$15	168,300	\$2,524,500
Handling of Stabilized Sediment for Disposal	CYD	\$5	168,300	\$841,500
Transportation <sup>6</sup>	TON	\$10	227,205	\$2,272,050
Disposal at Landfill <sup>7</sup>	TON	\$30	227,205	\$6,816,150
Decontamination	LS	\$50,000	1	\$50,000
Site Restoration of Staging Area	LS	\$50,000	1	\$50,000
<b>Sub-total: Full Scale Capital Costs</b>				<b>\$22,936,000</b>
<b>Engineering &amp; Administration</b>				
Engineering Design	LS	\$200,000	1	\$200,000
Construction Management/Oversight/Monitoring	LS	\$1,200,000	1	\$1,200,000
Permitting	LS	\$150,000	1	\$150,000
Reporting	LS	\$100,000	1	\$100,000
<b>Sub-total: Engineering &amp; Administration</b>				<b>\$1,650,000</b>
<b>TOTAL: Capital, Engineering &amp; Administration</b>				<b>\$24,586,000</b>
<b>Operation &amp; Maintenance</b>				
None Anticipated				\$0
<b>TOTAL: Annual Costs (Net Present Value, i = 7%)</b>				<b>\$0</b>
<b>SUBTOTAL:</b>				<b>\$24,586,000</b>
<b>CONTINGENCY (25%)<sup>8</sup></b>				<b>\$6,146,500</b>
<b>TOTAL COST<sup>9</sup></b>				<b>\$31,000,000</b>

**NOTES:**

- 1 Seawall replacement costs do not include contractor mob/demobilization, engineering design, construction observation, and project contingencies.
- 2 It is assumed that staging will occur at the Jones Island CDF. However, no permission has been requested or granted.
- 3 Dewatering volume of sediments assumes a 10% volume increase from dredging.
- 4 Water treatment volume assumes 100 gallons of water removed per cyd of sediment dredged.
- 5 Assumes a 10% decrease in sediment volume from dewatering.
- 6 Assumes sediment density of approximately 1.35 tons/cyd.
- 7 Costs for disposal at the Metro Landfill - Franklin, Wisconsin
- 8 Contingency represents the cost of items not estimated in detail, but known to be part of the project and the uncertainty in the amount or type of work that will ultimately be required.
- 9 Total cost was rounded to nearest million dollars.

Source: USACE/ WDNR. April 7, 2004. Kinnickinnic River, Wisconsin - Milwaukee Estuary of Concern - Deepening/Remediation Concept Design Documentation Report.

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**Table 9**  
**Conceptual Design Cost Estimate for Alternative 3B - 80-Foot Wide Navigation Channel**  
**(Dredge to a Range Between the Historic Navigation Depth and the Minimum Navigation Depth)**  
**CDF Disposal of Sediment**  
**Kinnickinnic River**  
**Milwaukee, Wisconsin**

Item	Unit	Estimated Unit Cost	Estimated Quantity	Present Worth
<b>Capital Costs</b>				
Mobilization/Demobilization	LS	\$100,000	1	\$100,000
Sunken Boat Removal	LS	\$100,000	1	\$100,000
Seawall Repair/Installation <sup>1</sup>	LF	\$1,200	2,669	\$3,202,800
Silt Containment Barrier	LS	\$200,000	1	\$200,000
Dredging/Barge Transport to CDF <sup>2</sup>	CYD	\$20	134,000	\$2,680,000
CDF Disposal Costs <sup>2</sup>	CYD	\$12	134,000	\$1,608,000
Decontamination	LS	\$15,000	1	\$15,000
<b>Sub-total: Full Scale Capital Costs</b>				<b>\$7,905,800</b>
<b>Engineering &amp; Administration</b>				
Engineering Design	LS	\$150,000	1	\$150,000
Construction Management/Oversight/Monitoring	LS	\$500,000	1	\$500,000
Permitting	LS	\$75,000	1	\$75,000
Reporting	LS	\$75,000	1	\$75,000
<b>Sub-total: Engineering &amp; Administration</b>				<b>\$800,000</b>
<b>TOTAL: Capital, Engineering &amp; Administration</b>				<b>\$8,705,800</b>
<b>Operation &amp; Maintenance</b>				
None Anticipated				\$0
<b>TOTAL: Annual Costs (Net Present Value, I = 7%)</b>				<b>\$0</b>
<b>SUBTOTAL:</b>				<b>\$8,705,800</b>
<b>CONTINGENCY (25%) <sup>3</sup></b>				<b>\$2,176,450</b>
<b>TOTAL COST <sup>4</sup></b>				<b>\$11,000,000</b>

**NOTES:**

- 1 Seawall replacement costs do not include contractor mob/demobilization, engineering design, construction observation, and project contingencies.
- 2 For this cost estimate it is assumed that disposal will occur at the Jones Island CDF. However, no permission has been requested or granted.
- 3 Contingency represents the cost of items not estimated in detail, but known to be part of the project and the uncertainty in the amount or type of work that will ultimately be required.
- 4 Total cost was rounded to nearest million dollars.

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**Table 10**  
**Conceptual Design Cost Estimate for Alternative 3B - 80-Foot Wide Navigation Channel**  
**(Dredge to a Range Between the Historic Navigation Depth and the Minimum Navigation Depth)**  
**Landfill Disposal of Sediment**  
**Kinnickinnic River**  
**Milwaukee, Wisconsin**

Item	Unit	Estimated Unit Cost	Estimated Quantity	Present Worth
<b>Capital Costs</b>				
Dewatering and Treatability Study	LS	\$50,000	1	\$50,000
Mobilization/Demobilization	LS	\$100,000	1	\$100,000
Sunken Boat Removal	LS	\$100,000	1	\$100,000
Seawall Repair/Installation <sup>1</sup>	LF	\$1,200	2,669	\$3,202,800
Silt Containment Barrier	LS	\$200,000	1	\$200,000
Dredging/Barge Transport to Staging Area <sup>2</sup>	CYD	\$20	134,000	\$2,680,000
Dewatering Area Construction (Berthing, Drains, etc) <sup>2</sup>	LS	\$150,000	1	\$150,000
Dewatering/Staging <sup>2,3</sup>	CYD	\$15	147,400	\$2,211,000
Treatment/Discharge of Pore Water <sup>2,4</sup>	MGAL	\$20,000	14.7	\$294,800
Stabilization/Solidification/Testing <sup>5</sup>	CYD	\$15	132,660	\$1,989,900
Handling of Stabilized Sediment for Disposal	CYD	\$5	132,660	\$663,300
Transportation <sup>6</sup>	TON	\$10	179,091	\$1,790,910
Disposal at Landfill <sup>7</sup>	TON	\$30	179,091	\$5,372,730
Decontamination	LS	\$50,000	1	\$50,000
Site Restoration of Staging Area	LS	\$50,000	1	\$50,000
<b>Sub-total: Full Scale Capital Costs</b>				<b>\$18,905,440</b>
<b>Engineering &amp; Administration</b>				
Engineering Design	LS	\$200,000	1	\$200,000
Construction Management/Oversight/Monitoring	LS	\$900,000	1	\$900,000
Permitting	LS	\$150,000	1	\$150,000
Reporting	LS	\$100,000	1	\$100,000
<b>Sub-total: Engineering &amp; Administration</b>				<b>\$1,350,000</b>
<b>TOTAL: Capital, Engineering &amp; Administration</b>				<b>\$20,255,440</b>
<b>Operation &amp; Maintenance</b>				
None Anticipated				\$0
<b>TOTAL: Annual Costs (Net Present Value, I = 7%)</b>				<b>\$0</b>
<b>SUBTOTAL:</b>				<b>\$20,255,440</b>
<b>CONTINGENCY (25%) <sup>8</sup></b>				<b>\$5,063,860</b>
<b>TOTAL COST <sup>9</sup></b>				<b>\$25,000,000</b>

**NOTES:**

- 1 Seawall replacement costs do not include contractor mob/demobilization, engineering design, construction observation, and project contingencies.
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- 3 Dewatering volume of sediments assumes a 10% volume increase from dredging.
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